



NORTHERN HARDWOOD NOTES

Regenerating Yellow Birch In The Lake States

The future of the yellow birch supply in the Lake States is uncertain. Growing-stock volume has declined more than one third since 1963, prompting the search for better ways to handle the difficult job of regenerating the species.

Through research and experience, we have developed enough information about the tree's special needs to make the following recommendations. Yellow birch regenerates best under a shelterwood system and needs:

- a suitable seedbed
- a uniformly spaced overstory
- an adequate seed supply.

To Prepare a Suitable Seedbed

The seedbed should provide a warm, moist site for germination and growth. The optimum germination temperature is about 60° F. Suitable seedbeds can be prepared by scarifying or burning after leaf fall and before cutting to expose 50-75 percent of the area. Scarification should be shallow with good mixing of humus and "A" layer of mineral soil. Areas under dense stands of hemlock require slightly deeper scarification and greater surface mixing. Exposure of the "B" layer, however, should be avoided.

Burning works best immediately after understory leafout and before cutting in the spring. If conifer tops are not a major part of the slash or are removed from the trunk areas, you may burn after cutting, preferably in the spring. Burn in the fall if regeneration of other species is sparse or absent. Burning or scarification increases soil surface temperature to near optimum for germination early in the season when moisture conditions are most favorable.

Scarifying or burning will normally eliminate seedlings already present. But if the regeneration is already 2 to 4 feet high, this understory should be killed with chemicals before scarifying or burning.

To Provide a Uniformly Spaced Overstory

A partial overstory is necessary to prevent surface soil drying and seedling exposure, hold down herbaceous competition, and permit higher soil temperatures.

Cut from below to leave 70-80 percent of the crown cover (NOT basal area) in a high, uniformly distributed canopy. Discriminate against sugar maple but don't create large openings in the canopy even if it means leaving maple or undesirable trees. This overstory shade helps seedlings to survive and to grow more rapidly during the establishment period.

To Obtain an Adequate Seed Supply

Retain at least four well-distributed seed trees per acre. Expect a good or better seed crop about 1 year in 3. A suitable seedbed, ample seed supply, and an adequate overstory enable the regeneration to become established 3-8 years after the initial cut. When the seedlings are about belt high, remove the rest of the overstory.

Do this only during periods of deep snow to minimize ground skidding and protect the seedlings' root systems.

Yellow birch seedlings.



Modification for Direct Seeding

You can direct seed yellow birch to introduce it into a stand or to enhance a poor seed crop.

Modify previous instructions by reversing the first two steps. Don't scarify or burn until after understory leafout in the spring.

Apply ½ pound of stratified yellow birch seed per acre about a week after site preparation. After regeneration is established (2-4 feet tall), remove the overstory.

Success of other methods of regenerating yellow birch in the Lake States has been uncertain. Clear-cutting, strip-cutting, and group selection, for example, have been tried with mixed results. Successful regeneration by these methods requires a combination of favorable weather, soil and site conditions, and past management-conditions that seldom exist in this region. Only the shelterwood system, as described, assures consistent, predictable results.

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